

VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE, LAC, DENV, CHIK, ZIKV, and JCV

Prepared by Lisa M. Reed and Dina Fonseca
Center for Vector Biology, Rutgers University
21 August to 27 August 2022, CDC Week 34
Data download 5:11 pm 26 August



This New Jersey Agricultural Experiment Station report is supported by Rutgers University, Hatch funds, funding from the NJ State Mosquito Control Commission and with the participation of the Department of Health, Department of Agriculture and of the 21 county mosquito control agencies of New Jersey. Data is held in JerseySurv, a subset of the CalSurv system.

NOTE: County/species tables for arboviruses are now in a supplemental file [here](#)

Arbovirus Summary

- Note: Data downloads times are noted and do not necessarily reflect all pools submitted and analyzed to that point in time. This report may vary from other reports from the same dataset as they are all snapshots in time.
- No pools tested for EEE virus have been detected positive in any species submitted to date. No horse or human cases have been reported.
- 326 pools have tested positive for WN virus, the first in *Aedes cantator*, collected in Burlington County on 2 June. Also positive were pools of *Culex Mix*, *Culex pipiens*, *Aedes albopictus*, *Ae. canadensis canadensis*, *Aedes cantator*, *Ae. japonicus*, *Ae. triseriatus*, and *Ae. vexans*. Three humans have been reported with WNV infection, one each in Bergen, Morris, and Ocean counties. One Red-tailed Hawk (*Buteo jamaicensis*) from Somerset County tested positive for WNV. No horse cases have been reported.
- No pools tested for SLE, LAC, DENG, CHIK, or ZIKA virus have been detected positive in any species submitted to date.
- 3 pools have tested positive for JC virus, the latest in *Anopheles punctipennis*, collected 18 Aug in Sussex County. The first two were both in *Aedes cantator*, collected in Bergen County at the same location, first collected on 3 June.
- In 2021, there were 35 positive EEE pools in *Culiseta melanura*, *Culex erraticus*, *Ae. taeniorhynchus*, and *Ae. triseriatus*. There were 3 horse case reported. There were no human cases reported.
- There were 997 positive WNV pools, in *Culex Mix*, *Culex pipiens*, *Culex restuans*, *Culex, erraticus*, *Culiseta melanura*, *Aedes albopictus*, *Aedes japonicus*, *Ae. taeniorhynchus*, *Ae. triseriatus*, *Ae. trivitattus*, *Ae. vexans*, *Anopheles bradleyi*, *An. punctipennis*, *An. quadrimaculatus*, *Coquillettidia perturbans*, *Psorophora ciliate*, and *Ps. ferox*. There were 36 human cases with 5 fatalities, plus 13 positive birds. There were no horse cases.
- There were 8 positive JVC pools in *Aedes albopictus*, *Ae. vexans*, *Anopheles punctipennis* and *Culex Mix*. There were 2 human cases reported.

Culiseta melanura and Eastern Equine Encephalitis

SITE/Boxes	Inland or Coastal	Historic Population Mean	Current Weekly Mean	Total Tested* (Collected)	Total Pools Tested* (Submitted)	EEE Isolation Pools	MFIR
Bass River (Burlington Co.)/5	Coastal	0.29	0.20	1	1		
Green Bank (Burlington Co.)/25	Coastal	2.75	0.00	11	5		
Corbin City (Atlantic Co.)/25	Coastal	1.49	0.20	141	15		
Dennisville (Cape May Co.)/50	Coastal	7.62	0.00	27	7		
Winslow (Camden Co.)/50	Inland	1.62	0.10	214 (219)	11 (12)		
Centerton (Salem Co.)/50	Inland	3.27	0.06	36 (39)	10 (11)		
Turkey Swamp (Monmouth Co.)/50	Inland	1.27	0.14	110	14		
Glassboro (Gloucester Co.)/50	Inland	0.24	0.00	30	11		

*Current week (in parentheses) results pending. ‡ Corrected from previous week. PW = Previous week na =not available ND=No Data NR=Not Recorded

Remarks: Currently, there are no positive EEE pools detected in the samples submitted.

Statewide: 1811 *Cs. melanura* from 232 pools have been submitted for testing, with no positive pools detected and an overall *Cs. melanura* MFIR of 0.000. 118,676 specimens in 4370 pools from 34 other species have also been tested with no positive pools detected. Overall MFIR for all species statewide is 0.000.

Traditional Resting Box Sites: 570 *Cs. melanura* from 74 pools have been collected at the traditional resting box sites with no positive pools detected and 2 pools of 8 total mosquitoes pending. Overall *Cs. melanura* MFIR at the traditional resting box site is 0.00.

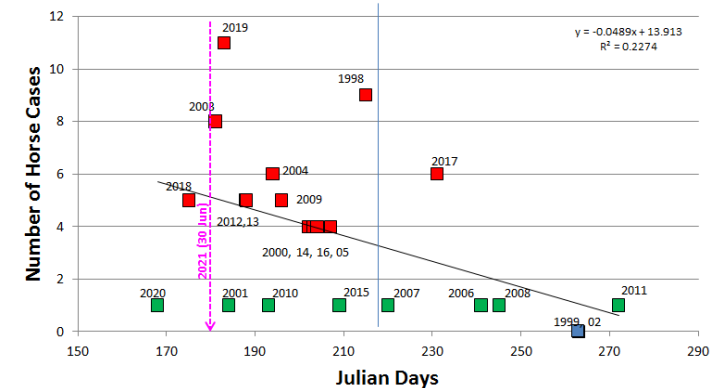
Additional <i>Cs. melanura</i> trapped by counties *traps with positives indicated in BOLD UNDERLINED>					
County	Trap types*	Pools	Mosquitoes	Positives	MFIR
Atlantic	CO2, RB	33	425		
Bergen	RB	2	42		
Burlington	UVLT	10	96		
Cape May	GRA, RB	12	20		
Cumberland	CO2, GRA, RB	24	83		
Gloucester	RB	12	127		
Middlesex	NJLT	3	15		
Monmouth	CO2	4	7		
Morris	ASP, CO2, GRA, RB	26	163		
Ocean	CO2	3	5		
Salem	CO2, RB	11	116		
Sussex	CO2, RB	18	142		
TOTAL		158	1241		

Additional County-set *Cs. melanura*: Counties maintain trap sites for *Cs. melanura* in other areas, using a variety of traps. In 2021, first positive pools of *Cs. Melanura* were detected at a non-traditional resting box site in Gloucester County, collected 30 Jun. Currently, there are no positive EEE pools detected.

Graph to the right indicate start times to detection of EEE in *Culiseta melanura* and associated number of horse cases from 1998 to 2021. Early detections are associated with multiple horse cases.

Horses and Humans: In 2021, 3 horses were reported with EEE. Currently, no horse or humans have been reported. For more information, see DOH Vectorborne Surveillance reports: <https://www.nj.gov/health/cd/statistics/arboviral-stats/>

EEE horse cases/year Timeline



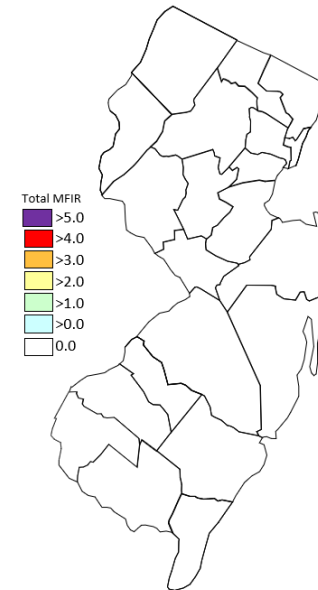
Case	Animal	Age	Sex	County	Date of Onset	Euthanized?	Vaccinated?	Comment
------	--------	-----	-----	--------	---------------	-------------	-------------	---------

Horses and Vaccinations: *Horse owners are urged to make sure their horses are up to date on their vaccinations (see link below). EEE horse cases are known to occur through October and sometimes into November.* Other sensitive species are non-native birds, such as Ostriches/Emus and Gallinaceous birds such as pheasants of Eurasian origins. The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

Species other than <i>Cs. melanura</i>	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	17	393		
<i>Aedes albopictus</i>	387	4205		
<i>Aedes atlanticus</i>	3	7		
<i>Aedes atropalpus</i>	1	1		
<i>Aedes aurifer</i>	16	154		
<i>Aedes canadensis canadensis</i>	78	1254		
<i>Aedes cantator</i>	49	1658		
<i>Aedes cinereus</i>	4	48		
<i>Aedes grossbecki</i>	9	51		
<i>Aedes japonicus</i>	357	2508		
<i>Aedes provocans</i>	2	3		
<i>Aedes sollicitans</i>	27	550		
<i>Aedes sticticus</i>	7	166		
<i>Aedes stimulans</i>	13	71		
<i>Aedes taeniorhynchus</i>	27	691		
<i>Aedes triseriatus</i>	67	168		
<i>Aedes trivittatus</i>	8	67		
<i>Aedes vexans</i>	129	2796		
<i>Anopheles spp.</i>	3	97		
<i>Anopheles barberi</i>	4	4		
<i>Anopheles bradleyi</i>	23	371		
<i>Anopheles crucians</i>	8	20		
<i>Anopheles punctipennis</i>	180	1991		
<i>Anopheles quadrimaculatus</i>	65	838		
<i>Coquillettidia perturbans</i>	159	3645		
<i>Culex erraticus</i>	59	729		
<i>Culex Mix</i>	2293	87049		
<i>Culex pipiens</i>	179	6523		
<i>Culex restuans</i>	133	1930		
<i>Culex salinarius</i>	21	351		
<i>Culiseta inornata</i>	8	17		
<i>Culiseta morsitans</i>	1	1		
<i>Orthopodomyia signifera</i>	2	2		
<i>Psorophora ciliata</i>	3	9		
<i>Psorophora columbiae</i>	9	43		
<i>Psorophora ferox</i>	19	265		
State Total	4370	118676		

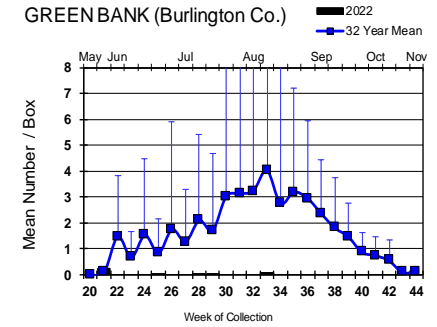
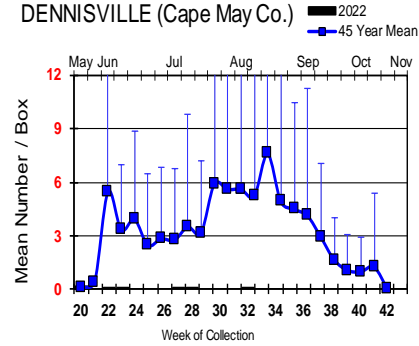
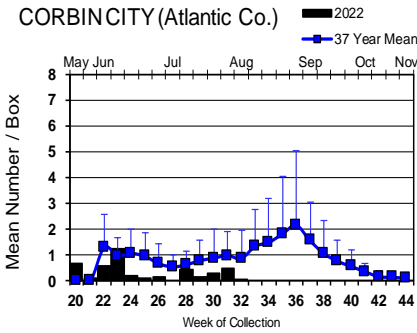
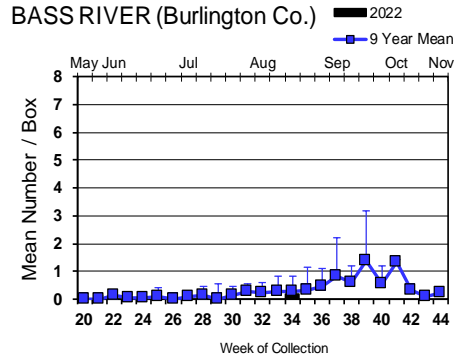
Additional Species: 34 additional species were tested for EEE. No positive pools were detected. In 2021, the first positive non-*melanura* pool was detected in of *Culex erraticus* in Atlantic County on 5 Aug.

Overall MFIR rates, human and animal cases per county:

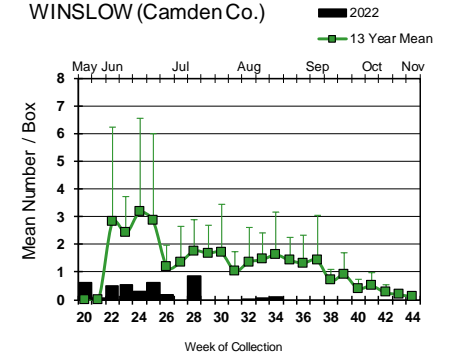
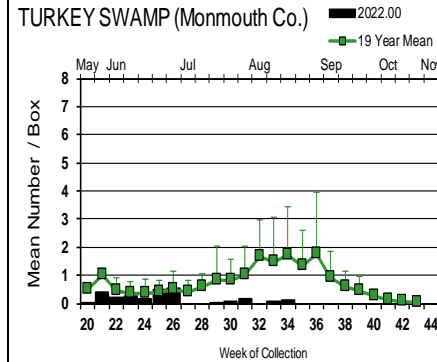
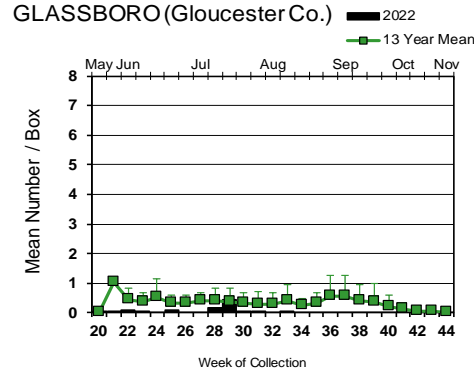
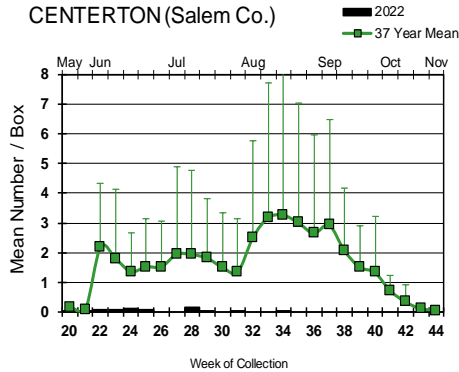


Culiseta melanura Populations



Coastal



Inland



***Cs. melanura* populations continue to remain below historic levels at the traditional resting box sites. Very few specimens again were collected this week. Drought conditions continue. Currently, no positive EEE pools have been detected at any sites within the state, but a Green Bank sample of *Ae. cantator* was positive for WNV near the beginning of the season.**



 = Positive pool(s) detected (red = melanura, purple = other species).

EEE in US (2022 cumulative cases): (Black or Red = previous + new reported cases occurring)

- equine: 9(FL)
- mosquito pools: 1(RI)
- sentinel: 47(FL)
- human:

West Nile Virus Positive Organisms in US, 2022

West Nile in US (2022 cumulative cases): Single black values indicate no change from previous week. Black values / red values equals previous week/**New totals**.
 Note: Data reported by all states should be considered provisional and subject to change. Sources for this table can be found [here](#).

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Alabama					1
Alaska					
Arizona		2	0		5
Arkansas					
California	78/92	1609/1834	40/52	2/4	18/26
Colorado		82/119			5/23
Connecticut		88/114			
Delaware					
Florida		2/2	37/83		1
Georgia					1/1
Hawaii					
Idaho	0	8/12		0	0
Illinois	3/8	952/1400		0	0
Indiana	0	40/83		1/1	1/1
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland(+DC)					
Mass.		33/54		0	1
Michigan					
Minnesota					
Mississippi		50/50			3/3
Missouri		0		0	1/1

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					
Nebraska					
Nevada					
New Hampshire					
New Jersey	1/1	268/326		3	0
New Mexico					
New York					
North Carolina					
North Dakota	0	0		0	5/5
Ohio		288/433		0	0
Oklahoma					
Oregon	0	12/12	0	1	0
Pennsylvania	2/3	1313/1641			6/6
Rhode Island		1			
South Carolina					
South Dakota		7			9/13
Tennessee					
Texas	0	164/182	0	0	6/7
Utah					
Vermont		1/2		0	0
Virginia					
Washington					
West Virginia					
Wisconsin					
Wyoming		3/5		0	0

* Can include other species (e.g., dogs, cows) reported positive.

Protocol: New Jersey Department of Health (NJDH Public Health Environmental and Agricultural Laboratories, PHEAL) and the Cape May County Department of Mosquito Control tests mosquito pools using RT-PCR Taqman techniques.

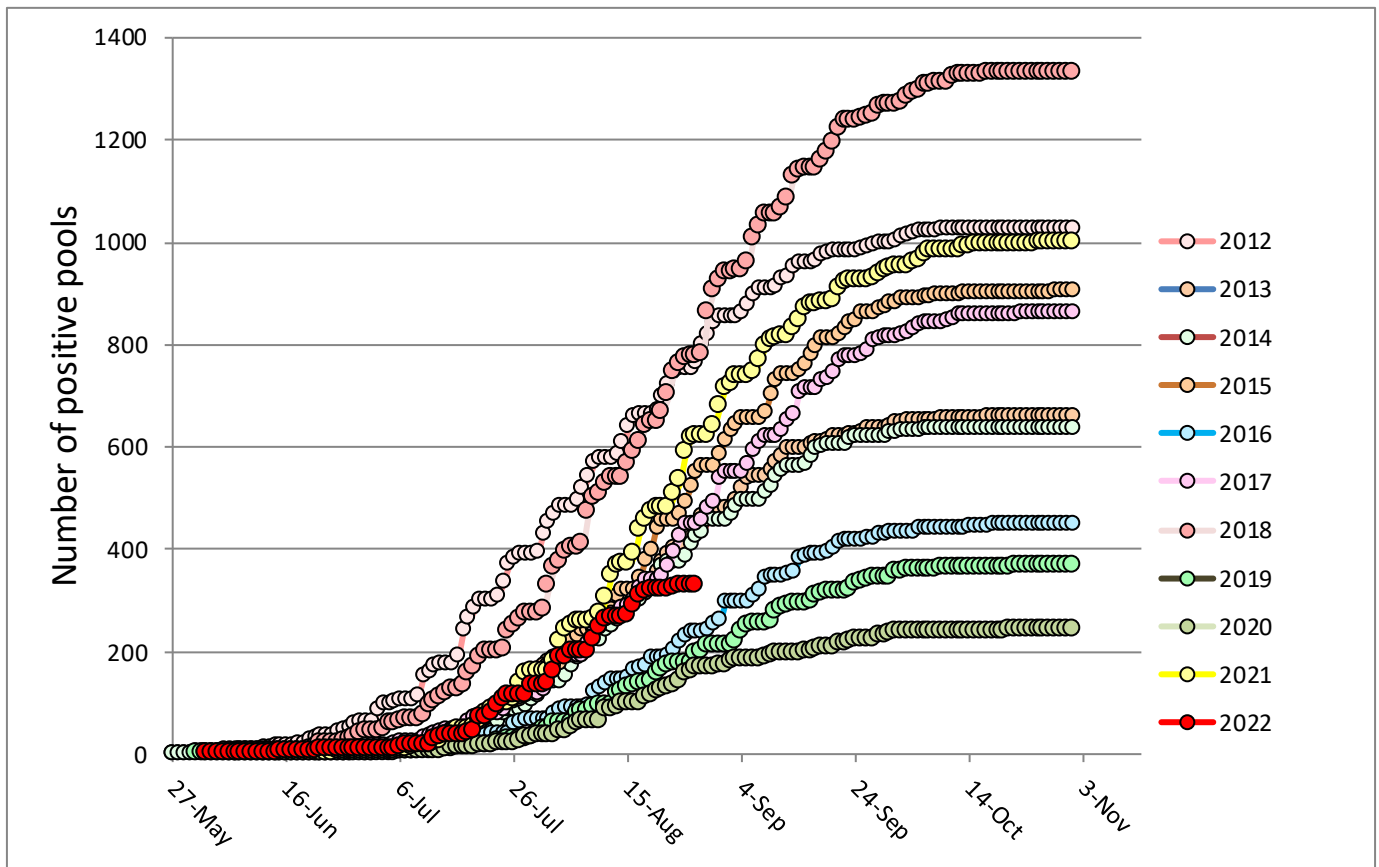
Mosquito Species Submitted and Tested for West Nile Virus through 26 August 2022

Species	Pools	Mosquitoes	Positives	MFIR
<i>Aedes abserratus</i>	17	393		
<i>Aedes albopictus</i>	387	4205	7	1.665
<i>Aedes atlanticus</i>	3	7		
<i>Aedes atropalpus</i>	1	1		
<i>Aedes aurifer</i>	16	154		
<i>Aedes canadensis canadensis</i>	78	1254	1	0.797
<i>Aedes cantator</i>	49	1658	1	0.603
<i>Aedes cinereus</i>	4	48		
<i>Aedes grossbecki</i>	9	51		
<i>Aedes japonicus</i>	369	2675	2	0.748
<i>Aedes provocans</i>	2	3		
<i>Aedes sollicitans</i>	28	582		
<i>Aedes sticticus</i>	7	166		
<i>Aedes stimulans</i>	13	71		
<i>Aedes taeniorhynchus</i>	27	691		
<i>Aedes triseriatus</i>	135	429	1	2.331
<i>Aedes trivittatus</i>	8	67		
<i>Aedes vexans</i>	129	2796	1	0.358
<i>Anopheles spp.</i>	3	97		
<i>Anopheles barberi</i>	4	4		
<i>Anopheles bradleyi</i>	23	371		
<i>Anopheles crucians</i>	8	20		
<i>Anopheles punctipennis</i>	180	1991		
<i>Anopheles quadrimaculatus</i>	65	838		
<i>Coquillettidia perturbans</i>	159	3645		
<i>Culex erraticus</i>	59	729		
<i>Culex spp.</i>	2293	87049	305	3.504
<i>Culex pipiens</i>	179	6523	8	1.226
<i>Culex restuans</i>	133	1930		
<i>Culex salinarius</i>	21	351		
<i>Culiseta inornata</i>	8	17		
<i>Culiseta melanura</i>	237	1829		
<i>Culiseta morsitans</i>	1	1		
<i>Orthopodomyia signifera</i>	2	2		
<i>Psorophora ciliata</i>	3	9		
<i>Psorophora columbiae</i>	9	43		
<i>Psorophora ferox</i>	19	265		
Grand Total	4688	120965	326	2.695

Remarks: To date 4688 pools of 120,965 mosquitoes from 35 species have been tested, with 326 positive pools of WNV detected. First positive pool was detected in *Aedes cantator*, collected 2 June in Burlington County at a traditional resting box site. Positive species include *Culex Mix*, *Culex pipiens*, *Aedes albopictus*, *Ae. canadensis canadensis*, *Ae. cantator*, *Ae. japonicus*, *Ae. triseriatus*, and *Ae. vexans*. Cumulative MFIR for all mosquitoes in New Jersey is 2.695, up from last week's value of 2.331.

Humans, Horses and Wild Birds: Three human cases of WNV have been detected, one each in Bergen, Morris and Ocean counties. Last year, no horses have been reported infected but 36 human cases were detected. See DOH reports on arbovirus activity for further information: <https://www.nj.gov/health/cd/statistics/arboviral-stats/index.shtml>

Although birds are no longer routinely tested in New Jersey, last year 13 corvids and birds of prey were reported positive for WNV. This year, one Red-tailed Hawk (*Buteo jamaicensis*) from Somerset County has been infected with WNV.



Above is a graph showing cumulative number of positive pools for the previous 10 years, inclusive of the most active (2018) year. 2022 is represented in RED (first positive collected 2 June).

Go [here](#) for the table supplement of arbovirus by county by mosquito species.